**From:** PETERSON Jenn L
**To:** Eric Blischke/R10/USEPA/US@EPA
**Subject:** RE: Dioxin TRV - Fish
**Date:** 09/16/2008 11:26 AM
**Attachments:** Steevens 2005 IEAM Paper.pdf

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I don't want to belabor this, but I think we have to calculate TEQ's based on Round 3 data for fish. My initial look at this a while back showed these samples significantly higher (e.g. bass PCB 126 highest was over 300 pg/g alone). However, I wish you would re-visit your dioxin like "screening number" because that is where the problem lies. There is literature out there already that could help address this (e.g. see attached SSD by Steevens et al.).

-Jennifer

-----Original Message-----
From: Blischke.Eric@epamail.epa.gov
[mailto:Blischke.Eric@epamail.epa.gov]
Sent: Tuesday, September 16, 2008 11:05 AM
To: PETERSON Jenn L
Subject: RE: Dioxin TRV - Fish

The TEFs for the mono-ortho PCBs are all reports as <0.000005 (that's five zeros). Not significant.

Of the non-ortho PCBs, PCB 126 has a fish TEF of 0.005. I just looked at the PCB 126 levels. Here are the highest:

Scuplin - RM 2 - 177pg/g
Lumbric - RM 2 - 249 pg/g
SMB - RM 3 - 103 pg/g
Carp - RM 3-6 - 112 pg/g
SMB - Swan Island Lagoon - 109 pg/g

Of the samples that had high dioxin detections:

Sculpin - RM 7 - 64 pg/g
SMB RM 7 - 49 pg/g
Lumbri - RPAC outfall - 118 pg/g.

These concentrations will not contriute significantly to the TECs I already calculated and sent to you yesterday.

I really see no need to develop a TRV for dioxin based on the results of my analysis.

Eric

"PETERSON Jenn L" <PETERSON.Jenn@deq.state.or.us> 09/16/2008 10:43 AM
To: Eric Blischke/R10/USEPA/US@EPA
cc:
Subject: RE: Dioxin TRV - Fish

In general this is true for fish (the opposite is true for birds and both are important for mammals), but we have some high PCB detections.

Here is the list:

Non-ortho PCBs
3,3',4,4'-TCB (77)
3,4,4',5-TCB (81)
3,3',4,4',5-PeCB (126)
3,3'4,4',5,5'-HxCB (169)
Mono-ortho PCBs
3,3',4,4'-PeCB (105)
2,3,4,4',5-PeCB (114)
2,3',4,4',5-PeCB (118)
2',3,4,4',5-PeCB (123)
2,3,3',4,4',5-HxCB (156)
2,3,3',4,4',5'-HxCB (157)
2,3',4,4',5,5'-HxCB (167)
2,3,3',4,4',5,5'-HeCB (189)

-----Original Message-----
From: Blischke.Eric@epamail.epa.gov
[mailto:Blischke.Eric@epamail.epa.gov]

Sent: Tuesday, September 16, 2008 10:36 AM
To: PETERSON Jenn L
Subject: RE: Dioxin TRV - Fish

Are these the non-ortho and mono-ortho PCBs? If so, I do not think they will contribute appreciably to dioxin risk given the low TEFs.

Eric

"PETERSON Jenn L" <PETERSON.Jenn@deq.state.or.us> 09/16/2008 10:33 AM

To: Eric Blischke/R10/USEPA/US@EPA
cc:
Subject: RE: Dioxin TRV - Fish

O.k. The are listed in that document I sent you - I could also send you my spreadsheet I put together to do the Rhone P. risk assessment if you are curious.

-Jennifer

-----Original Message-----
From: Blischke.Eric@epamail.epa.gov [mailto:Blischke.Eric@epamail.epa.gov]
Sent: Tuesday, September 16, 2008 10:31 AM
To: PETERSON Jenn L
Subject: RE: Dioxin TRV - Fish

I did not include them. I really don't know which ones they are nor do I know the TEF to apply.

Eric

"PETERSON Jenn L" <PETERSON.Jenn@deq.state.or.us> 09/16/2008 09:18 AM

To: Eric Blischke/R10/USEPA/US@EPA
cc:
Subject: RE: Dioxin TRV - Fish

Eric,

I don't see the PCB dioxin like congeners in your spreadsheets. Am I missing them?

-Jennifer

-----Original Message-----
From: Blischke.Eric@epamail.epa.gov [mailto:Blischke.Eric@epamail.epa.gov]
Sent: Monday, September 15, 2008 1:05 PM
To: PETERSON Jenn L
Cc: rgensemer@parametrix.com; Shephard.Burt@epamail.epa.gov
Subject: RE: Dioxin TRV - Fish

Jennifer, I have calculated a TEC for the smallmouth bass sample with the highest 2,3,7,8-TCDD concentration. I have added the TEFs per the document you just provided. I wasn't sure how to handle the non-2,3,7,8 substituted congeners (e.g., tetrachlorodibenzofuan) and so just applied a TEF of zero. If you have a better number, please add it in.

You can see from the spreadsheet that the calculated TEC for the dioxin compounds is 8.2 pg/g. Unless I made a significant error here, this strongly suggests that we do not need a TRV for dioxin in fish tissue.,

Eric

(See attached file: RM7SMBDioxinTEC.xls)

"PETERSON Jenn L" <PETERSON.Jenn@deq.state.or.us> — To: Eric Blischke/R10/USEPA/US@EPA — cc: — 09/15/2008 11:41 AM — Subject: RE: Dioxin TRV - Fish

For an exposure point concentration, you sum dioxins and furans and dioxin like PCB congeners according to the attached document. Each congener is assigned a TEF that equates its toxicity to 2,3,7,8-TCDD. You then compare that exposure point concentration to the TRV for 2,3,7,8-TCDD. I think Query manager can do it if the Round 3 data is available. There were problems outlined earlier with the fish 2,3,7,8-TCDD TRV used in the Round 2 Report, which is why I would like one developed using SSD methodology.

-Jennifer

-----Original Message-----
From: Blischke.Eric@epamail.epa.gov [mailto:Blischke.Eric@epamail.epa.gov]
Sent: Monday, September 15, 2008 11:21 AM
To: PETERSON Jenn L
Cc: ANDERSON Jim M; Shephard.Burt@epamail.epa.gov; Jeremy_Buck@fws.gov; rgensemer@parametrix.com; Robert Neely
Subject: RE: Dioxin TRV - Fish

We have been through this before. How do you do that?

Eric

"PETERSON Jenn L" <PETERSON.Jenn@deq.state.or.us> — To: Eric Blischke/R10/USEPA/US@EPA — cc: "ANDERSON Jim M" <ANDERSON.Jim@deq.state.or.us>, Burt Shephard/R10/USEPA/US@EPA, <Jeremy_Buck@fws.gov>, "Robert Neely" <Robert.Neely@noaa.gov>, <rgensemer@parametrix.com> — 09/15/2008 10:40 AM — Subject: RE: Dioxin TRV - Fish

You have to calculate a dioxin TEQ for fish. The TCDD screen does not answer the question.

-Jennifer

-----Original Message-----
From: Blischke.Eric@epamail.epa.gov [mailto:Blischke.Eric@epamail.epa.gov]
Sent: Monday, September 15, 2008 10:11 AM
To: PETERSON Jenn L
Cc: ANDERSON Jim M; Shephard.Burt@epamail.epa.gov; Jeremy_Buck@fws.gov; Robert Neely; rgensemer@parametrix.com
Subject: Re: Dioxin TRV - Fish

Jennifer, we went with the 90 pg/g screening criteria for 2,3,7,8-TCDD. We did not look at other dioxin congeners. Based on this screening step, only one sample - a lumbriculus sample collected offshore of the RPAC outfall - exceeds this criteria. As a result, we did not develop TRVs for dioxin.

I just performed a 2,3,7,8-TCDD screen for all tissue data (including Round 3B) collected at Portland Harbor. The highest 2,3,7,8-TCDD fish tissue concentration was a Round 1 smallmouth bass sample collected in the vicinity of RM 7 at 1.49 pg/g (ng/kg).

Burt and Bob, is my recollection accurate?

Eric

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|---|---|---|
| "PETERSON Jenn L" <PETERSON.Jenn@deq.state.or.us> | | To |
| 09/15/2008 08:59 AM | "ANDERSON Jim M" <ANDERSON.Jim@deq.state.or.us>, "Robert Neely" <Robert.Neely@noaa.gov>, <Jeremy_Buck@fws.gov> | cc |
| | Dioxin TRV - Fish | Subject |

What was the decision on the development of a dioxin TRV for fish? Was the Round 3 Data screened for dioxin TEQ?

-Jennifer

[attachment "DioxinTEQ_Methods_EPAJune2008.pdf" deleted by Eric Blischke/R10/USEPA/US]